



K-12 MATHEMATICS SPECIALIST ENDORSEMENT COURSEWORK

Foundations & Issues of Mathematics Education (2 credits)

This course provides an introduction to K-12 mathematics content and process standards, makes the case for using an inquiry-oriented approach in classrooms, and looks at current research.

Algebraic Reasoning for K-12 Educators (2 credits)

This course is designed for K-12 educators to deepen their understanding of **algebraic concepts** that build from kindergarten through high school.

Geometry & Measurement for K-12 Educators (2 credits)

This course is designed for K-12 educators to deepen their understanding of **geometry and measurement concepts** that build from kindergarten through high school.

Data Analysis & Probability for K-12 Educators (2 credits)

This course is designed for K-12 educators to deepen their understanding of **data analysis and probability concepts** that build from kindergarten through high school.

Understanding Student Thinking in Numbers & Operations (2 credits)

This course is designed to deepen teachers' awareness of ways that students come to understand whole numbers, rational numbers, and operations.

Understanding Student Thinking in Algebra (2 credits)

Based on recent research in mathematics education, this course provides opportunities for educators to deepen their understanding of how K-12 students develop algebraic reasoning.

Understanding Student Thinking in Geometry & Measurement (2 credits)

This course is designed to help teachers think through major ideas within the areas of K-12 geometry and measurement and to use recent research to examine how students develop their ideas.

Assessment for School Mathematics (2 credits)

This course supports educators in assessing what K-12 students know, what they can do, how they think mathematically, and their attitudes toward mathematics. Current assessment practices, from informal questioning to standardized testing, are explored, and the use of assessment information to guide instruction is emphasized.

Historical Development of Mathematical Concepts (2 credits)

This course traces the origins and development of key concepts in the history of mathematics starting with early Egyptians, Babylonians, and Mayans and continuing to current times.

Leadership in School Mathematics (2 credits)

This course focuses on how to provide effective professional development for K-12 teachers of mathematics and how to support meaningful change within an educational system. Lessons are drawn from research in mathematics education as well as research about improving schools.